(1) Statement of proposed project: Catalysts provide a quick avenue to solution of certain environmental or ecological problems that in broad outline are international in character. Complete oxidation of hydrocarbons and organic materials is one control mechanism for pollutants arising from many, varied sources such as manufacturing processes and automobiles. A better understanding of the oxidation mechanisms and of catalyst deactivation should greatly assist the search for optimum catalysts in various applications.

(2) Objectives of the project: The long-range program of this project has been cited in item (1) above.

(3) Description of activity with institutions and individuals involved on both sides, and indication of the U.S. and Soviet contributions: Initially, it is proposed to exchange personnel and scientific information between U.S. and U.S.S.R. scientists and scientific institutions. The exchange focal point would be catalytic oxidation mechanisms. The exchange should be so structured that it will provide the basis for a logical planning of complementary research in the U.S. and U.S.S.R. There must be, of course, agreement on both sides as to the most salient (and not fully understood) mechanistic points to be resolved. Initially research programs might focus on a model system such as the complete oxidation of propane and of carbon monoxide with individual country responsibilities based primarily on individual expertises within the two countries. There are many individuals within the U.S. who could contribute significantly in the initial exchange period. I would recommend Professor Robert Burwell at Northwestern to be one of the coordinators on the U.S. side. For the Soviets, G. K. Boreskov might be the best coordinator.

(4) Previous U.S.-U.S.S.R. contacts in this field: All contacts have been informal in character. There is evidence of mutual interest because scientists of both countries are aware of and adequately cite research done by workers in the other country.

(5) Time frame: It would probably take at least two years of exchange before it could be judiciously ascertained whether a complementary research program in oxidative mechanisms could be undertaken.

(6) Estimated U.S. costs by fiscal years and proposed sources of funding: Exchange of personnel and scientific meetings between the U.S. and Soviet scientists during the first two years would probably require expenditure of about $200,000. It is recommended that NSF fund the initial phases of this program. Later, when direct focal points have been identified, funding by other governmental agencies would be warranted.

and (8) Benefits to the U.S. and U.S.S.R.: Improvement of our environment.

) Possible security or political considerations: In the automobile exhaust eld there is extensive industrial research within the U.S. A number of ompanies have proprietary catalysts which are as yet not fully covered by atents. It would be several years before the U.S. would be in a position o fully disclose research done in industrial organizations on specific and effective catalysts for the automobile exhaust problem.